

### REMARKS

Claims 1, 3, and 13 have been amended. Claims 1 through 24 remain pending in this application. In light of the positions presented herein, all claims are believed to be in condition for allowance.

Claim 13 was rejected under 35 U.S.C. § 112, second paragraph, with regard to antecedent basis. The Examiner's point is well-taken, and Applicant believes the issue to be typographical in nature. Accordingly, solely for purpose of clarification and without further limitation, Claim 13 is hereby amended to replace "said electrode" with "said element" and is believed in condition for allowance.

On the merits, Claims 1-3, 13, 15 and 17 were rejected under 35 U.S.C. § 102(e) as being anticipated by Coffee (U.S. Patent No. 6,105,877). Claims 4-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Coffee in view of Schroeder (U.S. Patent No. 5,591,395). Claims 9-10 and Claims 22-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Coffee in view of Schroeder, Tsuchiya (U.S. Patent No. 4,083,954) and Bloch (U.S. Patent No. 4,071,616). Claims 11 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Coffee in view of Schroeder, Tsuchiya, Bloch, and Peltier (U.S. Patent No. 5,382,410). Claims 14, 16 and 18 through 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Coffee and Schroeder.

#### Claims 1-3, 13, 15 and 17

Claims 1-3, 13, 15 and 17 were rejected under 35 U.S.C. § 102(e) as being anticipated by Coffee. Applicant appreciates the Examiner's concern but believes Coffee to have been misconstrued. Applicant asserts that Coffee clearly does not teach or suggest the present invention. Coffee discloses a dispensing device requiring at least two

comminution means arranged to provide an area where charged comminutions of opposite polarity are admixed – in order to control the net charge on the admixed aerosols. The device is specifically directed to partially or totally removing the electric charge from the liquid droplets.

Coffee does not disclose or discuss use of the device with a substantially non-aqueous disinfection composition or use of the device to reduce airborne microbial levels. More specifically, the Coffee reference does not disclose, teach or suggest a substantially non-aqueous electrostatically dispensable disinfectant composition comprising an alcohol solvent, a glycol solute and a conductivity control component.

Under 35 U.S.C. § 102, the patent reference must sufficiently describe the claimed invention to have placed the public in possession of it. The reference must disclose all of the claimed elements "arranged as in the claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d, 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). In addition, missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). The reference must "clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without any need for picking, choosing and combining various disclosures not directly related to each other by the teachings of the reference." *In re Arkley*, 455 F.2d 586, 587. 172 U.S.P.Q. 524, 526 (CCPA 1972).

With reference to Coffee, non-medicinal inhalation uses of the device for dispensing perfumes or aromas is generally taught in column 4, lines 49-50. Applicant notes that "perfumes" and/or "aromas" as recited therein encompass partially or substantially aqueous, polar and/or ionizable compositions. Coffee does not define or place any limit on the compositional make-up of the recited perfume and aroma liquids.

Accordingly, there is no discussion or teaching in Coffee of a perfume or aroma component used for conductivity control.

Furthermore, while Coffee may recognize that use of certain, highly conductive liquids will establish a weaker electric field, Coffee fails to teach or discuss any solution to such problem or that there is any solution to the problem. Coffee merely suggests that tap water may not establish a practicable drag pressure, however, no suggestion as to how to control resistivity/conductivity of the practicable liquids is provided or contemplated. Indeed, Coffee seems to suggest that there is no solution to the problem, and thus, suggests that liquids comprising highly conductive (and/or highly polar) components are not practicable with the Coffee invention.

In a separate, unrelated example, a composition including ethanol and polyethylene glycol is illustrated for use in the disclosed device, see column 9, lines 61-63. However, there is no discussion or teaching in Coffee of a conductivity control component provided in context with such composition. A conductivity control element is entirely missing from the stated composition. Indeed, a conductivity control component, with or without reference to the ethanol/PEG composition, is not discussed or suggested anywhere in the Coffee reference.

Moreover, there is no discussion or teaching to combine the ethanol/PEG composition with the perfumes or aromas described in Column 4. Indeed, Coffee lacks any teaching or discussion relating the disclosed ethanol/PEG example to a perfume composition or suggesting the combination thereof. Nonetheless, as stated above, even if combined with the ethanol/PEG example, there is no indication that the perfume composition, as recited in Column 4, is provided as a conductivity control component. As such, combination of such unrelated elements from the Coffee disclosure, as suggested by the Examiner, does not result in the disclosure of the Applicant's disinfectant compositions.

Coffee does not describe or teach a substantially non-aqueous disinfectant composition including an alcohol solvent, a glycol solute and a conductivity control component. Indeed, unlike the present invention which utilizes a wide variety of disinfectant compositions (including, for example, polar solvents) in conjunction with a conductivity control component, Coffee fails to teach use of any such conductivity control component. As such, Coffee does not place into the possession of the public the disinfectant compositions as recited in the Applicant's invention. In light of the foregoing, the Coffee reference does not anticipate or render obvious the Applicant's invention and should be withdrawn. Accordingly, Applicant asserts that independent Claims 1 and 13, and all claims depending therefrom, are allowable over Coffee.

#### Claims 4-8

Claims 4-8 depend from Claim 1. The teachings of Schroeder do not suggest modification of Coffee that would anticipate or make obvious Claim 1. In addition, in light of the preceding, as the Coffee reference should be withdrawn, any combination with Schroeder is, likewise, inappropriate. Therefore, Applicant asserts that Claims 4-8 are not obvious in view of Coffee or Schroeder and are thus patentable thereover.

#### Claims 9, 10 and 22-24

Claims 9, 10 and 22-24 were rejected under 35 U.S.C. § 103 as unpatentable over Coffee, in view of Schroeder, Tsuchiya and Bloch. However, there is no reasonable expectation that Coffee motivates or suggests to one skilled in the art to make the proposed combinations or that, if made, any of the cited combinations would teach all the limitations of the present invention.

In particular, Coffee (electrohydrodynamic spray) and Schroeder (indirect heating) embody divergent liquid dispersion devices, utilizing substantially different methods of

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aerosol generation for substantially different purposes, and thus, utilize substantially different liquid compositions. No motivation is provided in Coffee to turn to indirect heating devices to uncover additional suitable liquids for use in a electrohydrodynamic spray device. Furthermore, there is no motivation, desirability or incentive in Coffee to utilize the disinfectant compositions described in Schroeder, or that compositions containing high concentrations of glycol (as in Example 1 of Schroeder) or highly aqueous compositions (as in Example 2 of Schroeder) would work in the Coffee device. Specifically, with respect to Claims 9 and 22, there is no teaching or suggestion in Coffee to alter the compositional make-up of the ethanol/PEG example to include other weight percent ranges or glycol components.

In addition, Applicant respectfully disagrees with the Examiner's interpretation of Schroeder either alone or in combination with Coffee. Schroeder is cited for disclosing a fragrance component (as illustrated in example 1) and a triethylene glycol component (as illustrated in example 2) having weight percent ranges falling within those recited in the present invention.

Applicant notes that there is no disclosure in Schroeder of a conductivity control component. Schroeder, instead, describes water, a conductivity enhancing component, as a preferred solvent (col. 2, lines 26 and 27). The Examiner presumes the fragrance component of Example 1 is a conductivity control component; yet, there is no basis in Schroeder for such presumption. Similar to the Coffee reference, there is no discussion or teaching in Schroeder for inclusion of a conductivity control component. Since Schroeder teaches indirect heating, rather than electrostatic dispensation of the agent, conductivity control is not important or desirable in the Schroeder invention. In fact, Schroeder clearly teaches away from conductivity control components, such as volatile hydrocarbon components (see col. 2, lines 5-10), and is preferably perfume free (see col.

2, lines 12-14). Where a fragrance component is used, it is provided quantities less than 15% of the total composition (see col. 2, lines 10-15 and Example 1).

Thus, as described above, neither Coffee nor Schroeder describe or suggest a substantially non-aqueous disinfectant composition including a conductivity control component. Therefore, with respect to Claims 9 and 22, there is no combination of Coffee or Schroeder that discloses, teaches or suggests every element of the claimed invention.

In addition, with respect to Claim 22, there is no suggestion or motivation in Coffee, Schroeder or both to modify the disclosed ethanol/PEG example in the Coffee reference or to substitute triethylene glycol and then to further modify the amount of triethylene glycol provided in Schroeder example 2 within the weight ranges disclosed in the present invention.

Further, Schroeder fails to teach weight percentages values for an alcohol component clearly because no such component is contemplated by the Schroeder reference. In particular, one skilled in the art would not use an alcohol solvent in the device of Schroeder as such use would present a serious risk of flammability. Accordingly, Schroeder teaches away from compositions utilizing an alcohol-based component, and thus, does not motivate or direct one skilled in the art to look to compositions including alcohol as suitable formulations for use in the methods described therein.

Tsuchiya discloses substantially aqueous, aerosol compositions requiring the use of a pressurized vessel and a propellant component to dispense the liquid composition. The compositions of Tsuchiya are formulated to form stable emulsions when the vessel containing the compositions is shaken. The compositional make-up, including the weight ranges selected for each of the components recited in Tsuchiya, are specifically selected to achieve such stable emulsions, thereby overcoming the problems associated with the

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prior art. The compositions are substantially aqueous, include an alcohol component, a propellant component and an emulsifier. (Tsuchiya does not teach or suggest use of a conductivity control component or a glycol component.) Tsuchiya does not teach use of any of its individual components apart from each other in the weight ranges recited therein – as the Tsuchiya compositions themselves embody the Tsuchiya invention.

Tsuchiya is cited for teaching a composition with an alcohol component within the ranges of the present claims. However, there is no motivation in Coffee or Schroeder to turn to Tsuchiya (a pressurized vessel delivery system) to find suitable liquids, or individual constituents thereof, that would work in the Coffee device. In particular, there is no motivation or incentive in Coffee to provide an excellent emulsion system for use in the Coffee device, as the Examiner states. Use of an emulsifying component, as required by the Tsuchiya compositions, is not contemplated by Coffee. In addition, because Coffee is an electrohydrodynamic spray device, it does not teach the desirability to use compositions, such as the Tsuchiya compositions, that include a propellant, or that such liquids would work in the Coffee device. Further, as stated above, the Coffee reference in combination with Schroeder teaches away from combination with Tsuchiya, as the Schroeder method inherently teaches against use of alcohol-based compositions.

In addition, because a Coffee, Schroeder and Tsuchiya combined or individually fail to disclose a conductivity control component, the Examiner's proposed combination does not teach each element of the Applicant's claims. Accordingly, the teachings of Tsuchiya do not suggest modification of Coffee or Schroeder or a combination thereof that would anticipate claims or make obvious Claims 9 and 22.

Bloch describes yet another genre of compositions, wholly different from the compositions discussed above. Specifically, Bloch discloses solid gel compositions. The Bloch compositions are substantially aqueous, include a starch component, a pigment component and a perfume component. The perfume component may be water and/or oil

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soluble (see column 3, lines 14-16). Bloch does not disclose, teach or suggest a conductivity control component. Indeed, because Bloch teaches a gel composition, and not an electrostatically dispensable composition, a conductivity control component is not contemplated or desirable in the Bloch reference. Thus, with respect to Claim 9 of the Applicant's invention, Bloch fails to teach a conductivity control component present at the recited weight percent ratios. Bloch also fails to disclose an alcohol component and a glycol component. With respect to Claim 22, Bloch does not disclose a fragrance component utilized to control the conductivity of the glycol component.

Accordingly, the teachings of Bloch do not suggest modification of Coffee, Schroeder or Tsuchiya or a combination thereof that would anticipate claims or make obvious Claims 9 or 22 or any claim depending therefrom.

One skilled in the art would simply not find motivation in the Coffee reference (an electrohydrodynamic spray device), to turn to the Schroeder compositions formulated for use in an indirect heating device, to the Tsuchiya compositions formulated for use in a pressurized vessel and then to the gel compositions of Bloch to achieve the compositions of the present invention. Accordingly, Applicant asserts that Claims 9 and 22 and all claims depending therefrom are not obvious in view of Coffee, Schroeder, Tsuchiya, and Bloch and are patentable thereover.

Applicant notes that in making the assessment of differences between the claimed invention and the prior art, 35 U.S.C. § 103 specifically requires consideration of the claimed invention "as a whole." The "as a whole" instruction in Section 103 prevents evaluation of the invention part by part. However, in light of the foregoing, Applicant contends that all of the § 103 obviousness rejections are based on improper hindsight reasoning. Indeed, the Examiner used the Applicant's invention as a blueprint to reconstruct the claims from isolated pieces of prior art. The Federal Circuit has



consistently held that requisite motivation to make a proposed combination must come from the prior art and not the Applicant's specification.

Applicant asserts that a reading of Coffee, Schroeder, Tsuchiya, and/or Bloch does not provide on skilled in the art with motivation to achieve the present invention. There is simply no motivation in Coffee to pick and choose specific components from such a diverse range of compositions as presented in Schroeder, Tsuchiya, and Bloch to arrive at the present invention. Clearly, the Examiner has overlooked the specific teachings of each of the cited references, many of which teach against combination of certain compositional elements, or require certain combinations of elements to achieve the desired utility of the reference.

#### Claims 11 and 12

Claims 11 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Coffee in view of Schroeder, Tsuchiya, Bloch, and Peltier (U.S. Patent No. 5,382,410). Claims 11 and 12 depend from Claim 9. In light of the preceding, as the Coffee and Schroeder references should be withdrawn, any combination with Peltier is, likewise, inappropriate. Therefore, Applicant asserts that Claims 11 and 12 are not obvious in view of Coffee, Schroeder or Peltier and are thus patentable thereover.

#### Claims 14, 16 and 18-21

Claims 14, 16 and 18 through 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Coffee and Schroeder.

With respect to Claim 18, and in light of the forgoing discussion, Applicant asserts that there is no motivation in Coffee for the Examiner's proposed combination with Schroeder and that such combination, if made, does not result in the claimed invention.

First, there is no motivation or teaching in Coffee providing a method of using a glycol to reduce airborne microbial levels; rather, Coffee teaches a device for use in spray applications, for example, application of a spray to agricultural crops or delivery of medicaments to the respiratory tract. One does not garner from Coffee motivation to use the device for reducing airborne bacteria levels, or a suggestion to combine Coffee with Schroeder (a heated wick device) in order to provide such a method.

There is simply no motivation, desirability or incentive in Coffee to utilize the disinfectant compositions described in Schroeder, or that compositions containing high concentrations of glycol (as in Example 2 of Schroeder) or highly aqueous compositions (as in Example 2 of Schroeder) would work in the Coffee device. Even if such compositions could be used in the Coffee device, there is no showing or reasonable expectation that the device of Coffee could provide an airborne glycol vapor capable of imparting a three log reduction of airborne microbial levels.

Coffee does not teach or describe use of *charged glycol air sanitizing compositions*. The ethanol/PEG example in the Coffee reference is comminuted using two nozzles, each attached to (+) and (-) voltage sources. The spray produced is an electrically neutral spray of the ethanol/PEG. See Col. 9, lines 64-67. Thus, the liquid droplets generated by the Coffee device are intentionally admixed to minimize droplet charge – the heart of the Coffee invention. As such, Coffee does not provide a method for using charged glycol composition to reduce airborne microbial levels – a specific limitation of the present invention. Further, Schroeder does not provide an electrostatically dispensable glycol composition or dispensation of a charge glycol vapor for reducing airborne microbial levels. Accordingly, the proposed combination does not teach all the limitations of Claim 18.

Accordingly, Claims 18 and all claims depending therefrom, are not obvious in view of the Coffee and Schroeder references and are patentable thereover. Further, in


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light of the above discussion, Claims 14, 16 and 19-20 are also not obvious in view of the Coffee and Schroeder references and are patentable thereover.

In summary, Claims 1 through 24 are believed to be allowable for the reasons given herein. Accordingly, these claims remain pending following entry of this Amendment, and are believed to be in condition for allowance at this time. As such, Applicant respectfully requests entry of the present Amendment and reconsideration of the application, with an early and favorable decision being solicited. Should the Examiner believe that the prosecution of the application could be expedited, the Examiner is requested to call Applicant's undersigned representative at the number listed below.

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